

ABSTRACT

A multi-axially forged mono-bloc piston includes a lower crown part forged of steel and including a pair of pin bosses and an integral skirt formed as one piece with the pin bosses 20. The lower crown part is friction welded to an upper crown part to form at least one closed oil gallery within the piston head. The lower crown part is forged in the longitudinal direction of the piston as well as laterally to impart longitudinal and laterally forged features of the piston. The laterally forged features may comprise undercut recesses formed in the piston skirt to reduce material in the overall piston structure. The lateral forging may also result in the piston skirt portion being decoupled from the piston head by laterally forged slots formed in the lower crown part 14 between the skirt and head.